

(Part-I)

2. Write short answers to any FOUR (4) questions: (8)

(i) What is the concept of stored program?

Ans John Von Neumann, in 1945, undertook a study of computation. He contributed a new awareness of how practical and fast computers should be built. These ideas, usually referred to as the stored-program technique, became essential for future generations of high speed digital computers and were universally adopted.

(ii) What is meant by electronic data processing?

Ans The process of performing arithmetic and logic operations with the help of computer is known as electronic data processing (EDP).

(iii) What are the basic components of computer system?

Ans There are two basic components of a computer system:

1. Computer Hardware
2. Computer Software

(iv) Define the purpose of function keys.

Ans Function keys are used to perform different functions depending upon the application or program that is executing. These keys provide shortcuts for doing routine tasks on a computer.

(v) What is keyboard layout?

Ans The keyboard layout refers to the arrangement of keys on the keyboard. Among the most popular keyboard layout are QWERTY and DVorak.

(vi) Define the monitor.

Ans The monitor is the most commonly used output device on personal computers (PCs). It is also called a display or a screen.

3. Write short answers to any FOUR (4) questions: (8)

(i) **What is RAM?**

Ans RAM is the primary storage device and the data and instructions are stored temporarily in it.

(ii) **Define the Minterms.**

Ans If we have two variables x and y, then we can form the following four products using these variables. $x.y$, $x.\bar{y}$, $\bar{x}.y$, $\bar{x}.\bar{y}$.

These are called standard products or minterms with two variables.

(iii) **What are Boolean variables?**

Ans If $B = \{0, 1\}$ with operations . and + is a Boolean algebra, then the variables x, y etc. are called Boolean variables.

(iv) **Define the application software.**

Ans The Application Software is a program created to perform a specific task for a user. For example, to create a document, a word processing software is used as MS-Word. Whereas, to create spreadsheets, we can use Excel or Lotus 123, etc.

(v) **What is meant by command line interface?**

Ans CLI stands for Command Line Interface. In such interfaces, the users communicate with the operating system by typing commands using a keyboard. Each command given to the OS activates one of the many programs in the OS.

(vi) **Write the purpose of "DEL" command.**

Ans It is useful but dangerous command provided by DoS. It is used to delete the files from the disk.

4. Write short answers to any FOUR (4) questions: (8)

(i) **What is unicode?**

Ans Unicode is the popular coding scheme used these days. It is a 16-bit coding scheme. So, more than $2^{16} = 65536$ characters can be represented in this coding scheme.

(ii) **Convert $(185)_{10}$ into hexadecimal.**

Ans

	Number	Remainder
16	185	
16	11	9
	0	B

$$185_{(10)} = 0B9_{(16)}$$

(iii) Define multitasking.

Ans With Windows computing environment, the user can do more than one task at a time. This is called "Multitasking".

(iv) What is folder?

Ans Folders are used to organize the data stored on your drives. We can sort our data on drives with folders that store different files. The files that make up a program are stored together in their own set of folders.

(v) What is antivirus?

Ans Antivirus is a software that is used to detect and remove a virus on a computer system.

(vi) Define disk drives.

Ans A disk drive is a machine that reads data from and writes data onto a disk.

(Part-II)

NOTE: Attempt any TWO (2) questions.

Q.5. Write note on pocket computer and laptop computer. (8)

Ans **Pocket (Palmtop) Computer:**

Pocket computers have been designed to allow people to keep lots of information close to hand wherever they happen to be. A pocket computer has to have small, light batteries that last a long. These computers have special operating systems suited to pocket computers. One problem with small computers is that they don't have full-sized keyboards attached. These computers use special pens and touch-sensitive screens to enter data as well as a number of small buttons or keys.

Laptop Computer:

The main aim of a laptop is that the persons using it can have all programs and data from their desktop computer on a portable computer. The person using a laptop should be able to

run all the same software on the laptop as runs on larger, desktop computers as laptop computers have the same types of operating system desktop ones. Modern laptops can have floppy drives, CD-ROM drives and CD re-writers, and even DVD drives. They often have full-sized keyboards and a mouse or a touch-sensitive mouse pad. The screen is usually a large Liquid Crystal Display (LCD).

Laptops are usually much more expensive than desktop computers. They have expensive battery packs that have to power the hard disk, CD drives and LCD screen. The batteries generally don't last as long as those in a pocket computer and may need recharging more than once a day, depending on the use.

Q.6. What is ROM? Write a note on its types. (8)

Ans **ROM (Read Only Memory):**

As is obvious from the name the contents of ROM can be read but new data cannot be written into it so it is a Read Only Memory. The manufacturer of the ROM writes the data and programs permanently into it and this data and programs cannot be changed afterwards. ROM is used to save frequently used instructions and data. The data stored in ROM will not change for a very long time. Following are the commonly used forms of ROM:

PROM (Programmable Read Only Memory):

This form of ROM is initially blank and the user can write his own data/programs on it by using special devices. Once the program/data is written on PROM, it cannot be changed or altered. It is obvious that this kind of ROM will be used for storing data for a very long period of time. The data written on this kind of ROM cannot be changed once it is written.

EPROM (Erasable Programmable Read Only Memory):

Like PROM, it is initially blank and programs and data can be written on it by the manufacturer or by the user with special devices. Unlike PROM, a user by using special purpose devices and ultraviolet rays can erase the data written on it. So data/program written on it can be changed and new data can also be added on this form of ROM. As the data written on this kind of ROM can be changed so data that may need to be

updated can be written on it but frequently changing data is not written on EEPROM.

EEPROM (Electrically Erasable Programmable Read Only Memory):

This kind of ROM can be re-written by using electrical devices and so data stored on EEPROM can be easily modified. EEPROM can be very useful for taking backup of data and for keeping records that are updated periodically.

It is important to note that all the forms of ROM described above are non-volatile. So, the data stored in these chips is not lost when electricity is cut-off. Mostly ROM chips are used to store frequently used programs like operating system routines (small programs) and data, which is not changed for long periods of time. It is also used to store programs needed to startup a computer system.

Q.7. Explain any two types of computer code.

(8)

Ans ➤ Binary Coded Decimal (BCD):

This coding scheme is used to represent numeric data. We know that decimal numbers system has ten different digits. To represent these digits, we need a 4-bit code. In BCD, the digits are assigned the following codes:

Table of BCD Codes

Digit	Code								
0	0000	1	0001	2	0010	3	0011	4	0100
5	0101	6	0110	7	0111	8	1000	9	1001

Following example shows the representation of non-negative integers in BCD:

Example: Represent 9807 in BCD.

Solution:

We know that in BCD

$$9 = 1001, 8 = 1000, 0 = 0000 \text{ and } 7 = 0111$$

$$\text{Thus } 9807 = 1001\ 1000\ 0000\ 0111$$

Clearly, we need 16 bits to represent this 4-digit number. The same number can be represented in binary by using 14 bits. So, the BCD codes use more bits hence required more computer memory. When arithmetic is to be performed on numbers coded in BCD either they are first converted into binary and then arithmetic is performed or special circuits are designed for this purpose.

Extended Binary Coded Decimal Interchange Code (EBCDIC):

IBM introduced a new way of character coding scheme called EBCDIC (Extended Binary Coded Decimal Interchange Code). It was a developed form of some of the existing codes like BCD. It is an 8-bit code, so 256 different characters can be represented in EBCDIC. It was the most frequently used character code but with the increased use of the personal computer and computer networks. The ASCII coding scheme became the standard coding scheme and now most of the computers use ASCII. Following table gives some of the characters and their EBCDIC codes:

Hex Code	Character						
C0	{	D0	}	E0	\	F0	0
C1	A	D1	J	E1		F1	1
C2	B	D2	K	E2	S	F2	2
C3	C	D3	L	E3	T	F3	3
C4	D	D4	M	E4	U	F4	4
C5	E	D5	N	E5	V	F5	5
C6	F	D6	O	E6	W	F6	6
C7	G	D7	P	E7	X	F7	7
C8	H	D8	Q	E8	Y	F8	8
C9	I	D9	R	E9	Z	F9	9